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EXAMINER

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1 RECORD OF ORAL HEARING
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3 UNITED STATES PATENT AND TRADEMARK OFFICE
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5
6 BEFORE THE BOARD OF PATENT APPEALS
7 AND INTERFERENCES
8

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10 Ex parte SHUNPEI YAMAZAKI,
11 JUN KOYAMA, and YU YAMAZAKI
12

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14 Appeal 2009-0918
15 Application 09/833,674
16 Technology Center 2600
17

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19 Oral Hearing Held: March 17, 2009
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23 Before JOSEPH F. RUGGIERO, MAHSHID D. SAADAT,
24 and MARC S. HOFF, Administrative Patent Judges
25

26 ON BEHALF OF THE APPELLANTS:
27

28 HUSSEIN AKHAVANNIK, ESQUIRE
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32

33 The above-entitled matter came on for hearing on Tuesday, March 17,
34 2009, commencing at 1:29 p.m., at the U.S. Patent and Trademark Office,
35 600 Dulany Street, Alexandria, Virginia, before Dawn A. Brown, Notary
36 Public.
37

1 THE USHER: Calendar Number 17, Appeal Number 2009-0918.

2 Mr. Akhavannik.

3 MR. AKHAVANNIK: Good morning.

4 JUDGE RUGGIERO: Do you want to spell your name for the
5 reporter?

6 MR. AKHAVANNIK: It is Hussein, H-U-S-S-E-I-N. That is my first
7 name. And my last name is Akhavannik, A-K-H-A-V-A-N-N-I-K. It looks
8 harder than it is.

9 I'm ready whenever you are.

10 JUDGE RUGGIERO: Go ahead.

11 MR. AKHAVANNIK: Good morning, Your Honors. My name is
12 Hussein Akhavannik, and I represent the appellant, Semiconductor Energy
13 Laboratory.

14 The appellant has appealed the rejection of independent claims 1, 7,
15 35, 43, 51, 57, 85 and 93, and their respective dependent claims over the
16 combination of Ritter, Harkin and Tang. In addition to the new reference
17 that is being applied by the examiner first introduced in the examiner's
18 answer, which is Tang as a teaching reference for teaching inherency.

19 The independent claims, I won't go through numbering them again, all
20 recite similar features. In particular, they each recite the feature of a display
21 device having pixels, each of which includes a light-emitting element and a
22 sensor for reading biological information of a user.

23 And near the end of the claim there is a wherein clause in each of the
24 independent claims that states that the light-emitting element comprises a
25 cathode, a light-emitting layer, and an anode.

26

1 An example structure is shown in the specification wherein a pixel
2 includes both a light-emitting element and a sensor. In figure 8, there is
3 element 106, which is a light-emitting element, and element reference
4 number 113, which represents a photodiode as a sensor element.

5 The photodiode is actually claimed in claims 109 through 116 as
6 dependent claims for your information as possible types -- as a type of a
7 sensor.

8 Flipping through the application, we get to start at figure 11A. There
9 are ten steps being shown starting from figure 11A through figure 13C,
10 which show the processing required to have a pixel including both the sensor
11 and the light-emitting element.

12 Figure 13C, which is kind of a culmination of all the steps, shows the
13 reference number 784, for example, as a photodiode, and reference number
14 786 as a light-emitting element.

15 Another example, just for your information, is figure 14B which
16 shows the photodiode 4201, which is the reference number, and the light-
17 emitting element 4202.

18 JUDGE SAADAT: Counsel, none of these processes are different
19 from what is common in the industry for manufacturing photodiodes or
20 light-emitting elements, correct?

21 MR. AKHAVANNIK: Actually, I disagree, Your Honor. For
22 example, as Tang shows, there is some processing being shown to create a
23 light-emitting device. But again, as that reference shows, creation or
24 processing to create light-emitting elements as LEDs in and of themselves
25 was well known within the industry.

1 However, the processing being shown in figures 11A to 13C is
2 actually quite different. It shows two different types of elements being
3 created. You have a light-emitting element and you have a photodiode, both
4 of which have slightly different structure. And so, all those steps are
5 required to create both of those elements.

6 JUDGE SAADAT: I appreciate your explaining the process, but
7 based on your brief, your argument was based on the fact that undue
8 experimentation is needed to substitute the liquid crystal display in Harkin
9 with a photo-luminous display. So what is the undue experimentation that
10 you are referring to?

11 MR. AKHAVANNIK: That is a great question, Your Honor. It is
12 exactly those ten steps that we show in figures 11A through 13C. The undue
13 experimentation would be to create the processing to have the structure that
14 has a photodiode and a sensor in the same pixel.

15 Harkin, it doesn't even describe light-emitting devices; it describes or
16 kind of a suggestion to do so, which is exactly, as we point out in the MPEP,
17 is just a mere naming of a possibility for doing so. And the undue
18 experimentation would result in having to create the process for creating the
19 structure that we're claiming.

20 There is -- I can give a few examples of differences even just in the
21 teaching reference Tang, which was provided, and in Harkin on why
22 between those two references which have been cited there is going to be
23 some experimentation required to get there. I don't know if you want me to
24 walk through those or not.

25 JUDGE SAADAT: Not specifically. But the elements that are in the
26 claim, just broadly recited, are a light-emitting element with each pixel and

1 specifically a light-emitting layer and an anode for the light-emitting
2 element.

3 We assume that the rest of the elements are probably processed with
4 no conventional methods that one of ordinary skill in the art would have
5 known or would have obviously been able to put together. So what is it
6 about using a photo or photo-luminous layer of a liquid crystal layer that
7 requires the undue experimentation?

8 MR. AKHAVANNIK: To go from one to the other is going to require
9 a completely different processing.

10 As you know, the liquid crystal devices only have a single -- or, in
11 fact, Harkin specifically explains that you either have no light-emitting
12 element in liquid crystal displays -- you can use ambient light to show that --
13 or you have a backlight, which is probably the screens you're using there,
14 that would provide the light emission.

15 In LEDs, you have a light emission element in every single pixel. But
16 what is required with this claim is that that same pixel also requires a sensor
17 to be able to detect. And to be able to come up with processing to do so
18 requires undue experimentation.

19 JUDGE SAADAT: And this undue experimentation is beyond what
20 one of ordinary skill in the art would have known with respect to putting or
21 adding whatever circuit is needed to make it work? Because, definitely there
22 is a little bit of adjustment needed but would that be beyond the knowledge
23 of ordinary skill in the art?

24 MR. AKHAVANNIK: I understand we're standing here in 2009
25 talking about all the things, you know, as you see the two displays in front of
26

1 you, liquid LED elements and liquid crystal elements have become much
2 more propagated.

3 In 2001 when this application was filed in the U.S., the applicant
4 believes that there was need for undue experimentation to have to create an
5 LED structure that also has a sensor within each pixel, and that is why they
6 have those ten separate steps to do so.

7 Any other questions?

8 JUDGE SAADAT: No more questions.

9 JUDGE HOFF: I have nothing further.

10 JUDGE SAADAT: I don't have any.

11 JUDGE RUGGIERO: Okay.

12 MR. AKHAVANNIK: Thank you for your time.

13 (Whereupon, the proceedings at 1:38 p.m. were concluded.)